

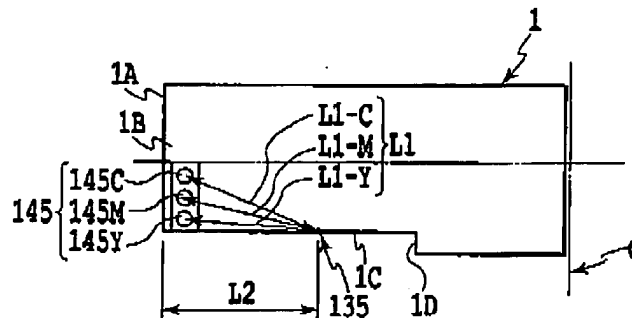
REMARKS

This application has been carefully reviewed in light of the Office Action dated October 12, 2007. Claims 1 to 17 are in the application, of which Claim 1 is still the sole independent claim. Reconsideration and further examination are respectfully requested.

The Office Action entered a rejection of all claims based on art, primarily over U.S. Patent 6,416,166 (Robinson, for which rejections were entered under 35 U.S.C. § 102(b)), and over U.S. Patent 5,500,664 (Suzuki), U.S. Patent 5,552,816 (Oda), U.S. Patent 5,619,237 (Inoue), and U.S. Patent 6,908,182 (Nakazawa), for which rejections were entered under 35 U.S.C. § 103(a). The rejections are all respectfully traversed.

The invention concerns the construction of an ink cartridge installed in an ink jet printing apparatus. The ink cartridge is designed for simple yet reliable attachment and detachment to the ink jet printing apparatus, and thus includes an engage reference portion and a joint section arranged in a particular distance relationship with one end of the ink cartridge. The "one end" is an end which is positioned in a leading side of an insertion direction in which the ink cartridge is installed in the ink jet printing apparatus. According to the distance relationship set out in the claims, a distance L1 between the joint section and the engage reference portion is shorter than a distance L2 between the one end of the ink cartridge and the engage reference portion.

One example embodiment of the invention is shown in Figure 5A and described at page 20 of the subject application. Figure 5A is reproduced below:

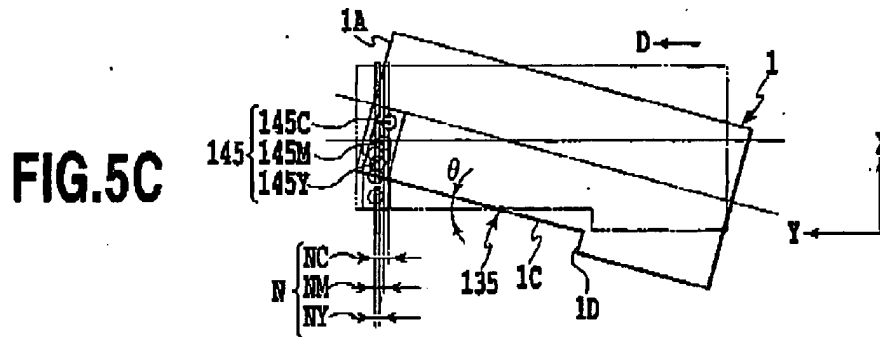
FIG.5A

As shown in Figure 5A, and as described at page 20, the "one end" 1A is positioned in a leading side of an insertion direction, which in the above figure is a right-to-left direction (refer to arrow D in Figure 5C, which is reproduced on the next page). Thus, as shown above, joint section 145 is positioned in the proximity of leading end 1A. Furthermore, the distance L2 is defined as a distance between a front surface end 1A and the engage reference portion 135. According to the claimed invention, the distances L1 and L2 have the relationship of $L1 < L2$.

In entering the § 103(a) rejection of the claims, the Office Action conceded that none of the applied art showed the length relationship of $L1 < L2$. However, the Office Action took the position that such a length relationship was a "matter of a mechanical design expedient, and thus would have been obvious at the time of the invention". Applicants respectfully disagree with the position taken by the Office Action, for the reason that the claimed length relationship provides an advantageous effect as described below.

Specifically, as ink cartridge 1 is installed in the ink jet printing apparatus, because it is necessary to maintain a clearance between the ink cartridge and the ink jet

printing apparatus, there is usually some slight wobbling therebetween. See page 21, lines 3 through 12. This wobbling is described in connection with Figure 5C, which is reproduced below.



As shown in Figure 5C, the ink cartridge 1 slightly wobbles around engage reference portion 135 when the ink cartridge is installed. Therefore, the one end 1A of the ink cartridge 1 wobbles as the ink cartridge 1 is installed. However, because of the relationship of $L1 < L2$, a deviation amount N of the joint section 145 becomes smaller compared to the degree of wobbling of the one end 1A. Therefore, it is possible to suppress the effect of wobbling of the ink cartridge 1, such that the deviation amount N of joint section 145 becomes relatively smaller as compared to the degree of wobbling of ink cartridge 1 around engage reference portion 135. See page 23, lines 5 to 14. As a result, the joint section 145 and an ink jet head can be accurately aligned and securely connected.

In view of the Office Action's concession that none of Suzuki, Oda, Inoue or Nakazawa show the claimed length relationship of $L1 < L2$, and in view of the advantageous effect provided by such a length relationship, it is respectfully submitted that

this length relationship is much more than a “mechanical design expedient”, such that the claimed invention would not have been obvious.

With respect to the § 102(b) rejection over Robinson, Applicants respectfully disagree with the assertion in the Office Action that Robinson shows the claimed length relationship. In Robinson, a bottom wall 95 corresponds to the claimed “one end” of the present invention, for the reason that the bottom wall 95 is positioned in a leading side of an insertion direction in which Robinson’s cartridge 16 is installed in printer 10. A joint portion 60 is positioned in proximity of this bottom wall 95. Therefore, in Robinson, L1 and L2 correspond to the lengths shown below, taken from Figure 9A of Robinson:

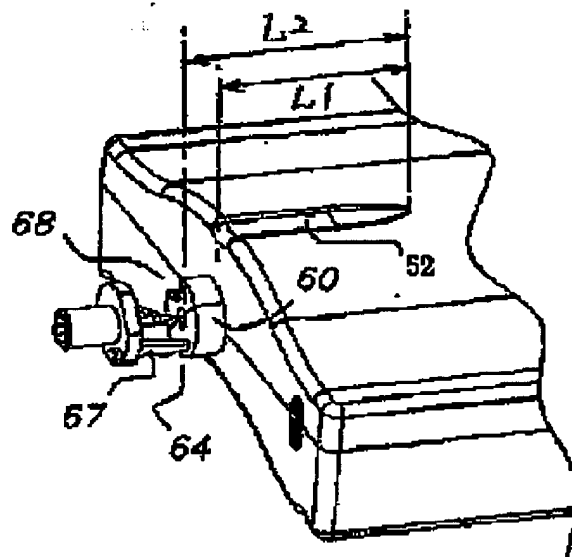


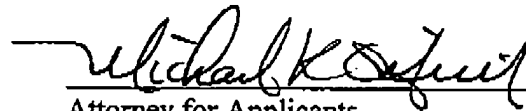
FIG. 9A

In Robinson, therefore, it is clear that the distances L1 and L2 have a length relationship of $L1 > L2$, which is precisely opposite to the claimed relationship of $L1 < L2$.

It is therefore respectfully submitted that the invention claimed herein defines subject matter that is neither anticipated nor would have been obvious from any permissible combination of the applied references to Robinson, Suzuki, Oda, Inoue or Nakazawa. Allowance of the claims is respectfully requested.

Applicants' undersigned attorney may be reached in our Costa Mesa, California office at (714) 540-8700. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,



Attorney for Applicants
Michael K. O'Neill
Registration No.: 32,622

FITZPATRICK, CELLA, HARPER & SCINTO
30 Rockefeller Plaza
New York, New York 10112-3800
Facsimile: (212) 218-2200

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